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REMARKS

The application has been reviewed in light of the Office Action dated May 19, 2009. Claims 1-20 are pending. By this Amendment, claims 1, 2 and 4-20 have been amended to address informalities therein. Claims 1-20 remain pending upon entry of this Amendment, with claims 1 and 11 being in independent form.

The drawings were objected to. Claims 2 and 12 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite.

In response, the application has been reviewed and amended to address the formal issues referenced in the Office Action.

Withdrawal of the objection to the drawings and the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

Claims 1, 3, 6, 11, 13 and 16 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Giger et al. (US 2001/0043729 A1) in view of Konoshima et al. (US 2002/0076108 A1). Claims 2, 4, 5, 7, 9, 12, 14, 15, 17 and 19 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Giger in view of Konoshima and further in view of U.S. Patent No 6,301,498 to Greenberg et al. Claims 8 and 18 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Giger in view of Konoshima and further in view of Heilbrun et al. (US 2001/0039421 A1) and Mault (US 2001/10044588 A1). Claims 10 and 20 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Giger in view of Konoshima and Greenberg and further in view of U.S. Patent No. 6,643,533 to Knoploch.

Applicant respectfully submits that the present application is allowable over the cited art, for at least the reason that the cited art does not disclose or suggest the aspect of the present application of calculating *in one image* a degree of deformation from normal shapes of organ

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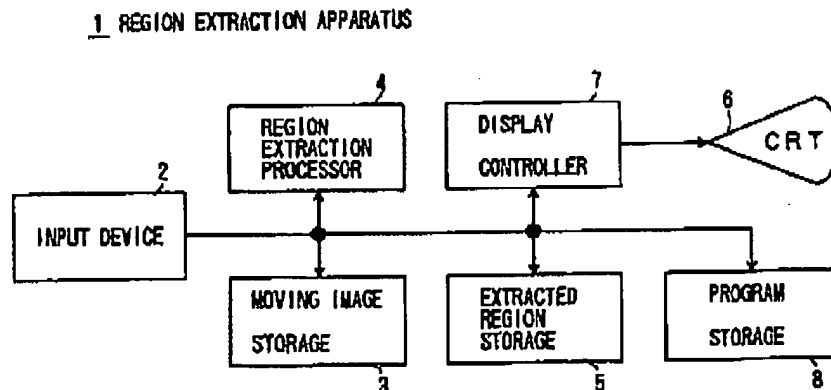
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regions.

Giger, as acknowledged in the Office Action does NOT disclose or suggest such aspect of the present application.

Konoshima, as understood by applicant, proposes an apparatus 1 for extracting a desired region from a moving image, as shown in Fig. 1 (reproduced below), including an input device 2 for specifying an object to be extracted, a moving image storage 3 for storing the moving image, a region extraction processor 4 for extracting the object image region specified by the input device 2 from the moving image stored in the moving image storage 3, an extracted region storage 5 for storing the extracted region which is extracted by the region extraction processor, a display unit 6 and a display controller 7 for controlling the display unit 6, and a program storage 8 for storing a program.

FIG. 1



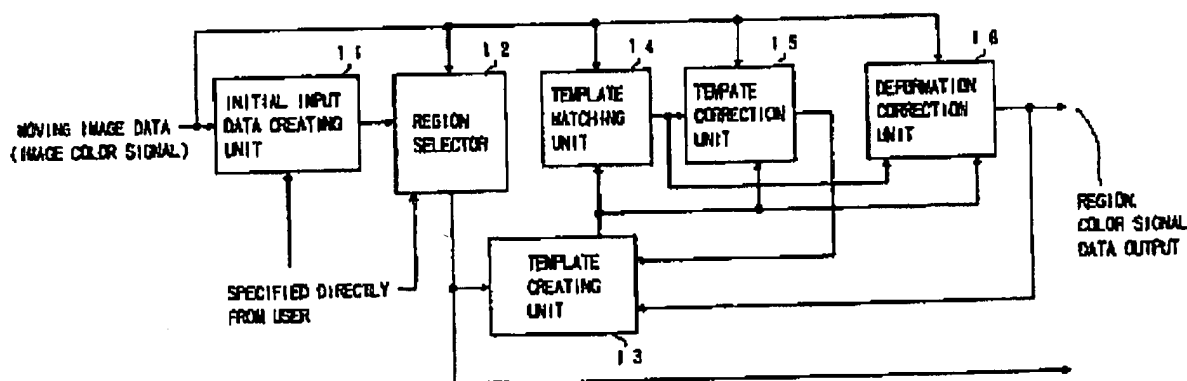
In the region extraction processor 4, as shown in Fig. 2 (reproduced below), an initial input data creating unit 11 creates an initial input data in response to an instruction from the input device 2, a region selector 12 selects the region which is to be extracted depending on the initial input data created by the initial input data creating unit 11, a template creating unit 13

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creates a template depending on the region which is selected by the region selector 12, a template matching unit 14 carries out a matching with respect to the template created by the template creating unit 13 and the image supplied from the moving image storage 3, a template correction unit 15 *corrects the template* created by the template creating unit 13 depending on a result of the matching carried out by the template matching unit 14, and a deformation correction unit 16 compares the template created by the template creating unit 13 and the image supplied from the moving image storage 3, and corrects a *deformation of the template*.

FIG. 2



Thus, the device proposed in Konoshima calculates a deformation of *a template* for extracting a selected region in an image supplied from moving image storage and does NOT calculate the deformation of *the organ*. Such calculation by the device proposed in Konoshima is for *correcting the template*, depending on a result of matching between the template and the image supplied from the moving image storage 3.

However, Konoshima is *NOT* concerned with calculating a degree of deformation of the organ from normal shape thereof caused by a lesion thereon. In other words, the calculation of

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deformation disclosed in Konoshima does *NOT* involve detecting an abnormal region in the organ, but rather merely is directed to correct the shape of the template.

In addition, deformation is determined by the device proposed in Konoshima based on movements or shape-changes between two images supplied from the moving image storage 3, so that the deformation calculation requires at least two images and is processed based on the two (or more) images.

Konoshima, like Giger, does not disclose or suggest (and therefore cannot anticipate) the aspect of the present application of calculating *in one image* (and NOT over more than one image) a degree of deformation from normal shapes of organ regions. Such calculation of a degree of deformation enables detection of existence of lesion, is NOT for the purpose of extracting a desired region.

The other cited references (including Greenberg, Heilbrun, Mault and Knoplioch) likewise do NOT disclose or suggest the above-mentioned aspect of the present application of calculating *in one image* a degree of deformation from normal shapes of organ regions.

Applicant submits that the cited art, even when considered along with common sense and common knowledge to one skilled in the art, does *NOT* render unpatentable the above-mentioned aspect of the present application.

Accordingly, applicant respectfully submits that independent claims 1 and 11, and the claims depending therefrom, are allowable over the cited art.

In view of the remarks hereinabove, applicant submits that the application is now allowable, and earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any

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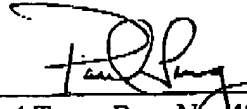
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required fees in connection with this amendment, and to credit any overpayment, to our Deposit  
Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner  
is respectfully requested to call the undersigned attorney.

Respectfully submitted,



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